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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/075,387      | 02/15/2002  | Jay H. McCandless    | HAR66 816 CONT      | 9309             |

7590 06/04/2003

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EXAMINER

WIMER, MICHAEL C

ART UNIT PAPER NUMBER

2821

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/075,387

Applicant(s)

MCCANDLESS ET AL.

Examiner

Michael C. Wimer

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2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 60-62, 69-82, 89 and 90 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 69-82 is/are allowed.
- 6) ☒ Claim(s) 60-62, 89 and 90 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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## **DETAILED ACTION**

### ***Allowable Subject Matter***

1. The indicated allowability of claims 60-62, 89 and 90 is withdrawn in view of the newly discovered reference(s) to Seling (2975383) and Klein (3919670). Rejections based on the newly cited reference(s) follow.

### ***Claim Rejections - 35 USC § 112***

2. Claims 60-62 and 90 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 60, line 3, there is no proper antecedent basis for "the waveguide" because lines 1 and 2 recite two different waveguides. Therefore, there is confusion as to which waveguide or an additional one, this language refers.

In Claim 90, the last three lines contain two periods (a left-over clause exists in the last two lines), which make the claim unclear and not understood as to the complete structure intended to be claimed.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 60,62,89 and 90 are rejected under 35 U.S.C. 102(b) as being anticipated by Seling (2975383).

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Regarding Claims 60 and 62, Seling shows a universal coupler 18 for coupling a signal through a first waveguide 14 configured for a first polarization (e.g., vertical) and a second waveguide 16 configured for a second polarization (e.g., horizontal) comprising a plate 26 having a thickness of one quarter wavelength (col. 2, lines 20-22) of the signal, and an aperture configured for a polarization different from both the first and second polarizations, via projecting probes 36,38 within said aperture and that cause a diagonal electric field (Figures 3 and 4, col. 2, lines 58-61), all arranged as claimed.

Regarding Claim 89, Seling shows a polarization plate 18,26 for a signal having a wavelength and one of two polarizations comprising a waveguide having a length of approximately one quarter wavelength, the physical configuration of the waveguide being associated with a polarization midway (diagonally oriented in Figures 3 and 4) between the two orthogonal polarizations, all arranged as claimed.

Regarding Claim 90, Seling shows a waveguide system for a signal having a predetermined wavelength comprising, a first waveguide 14 physically configured for a signal having one of two orthogonal polarizations, a second waveguide 16 physically configured for a signal having one of the same two orthogonal polarizations, and a polarization plate 18 intermediate the first and second waveguides 14 and 16, the plate having a thickness of approximately one quarter of the wavelength and a slot (formed between the probes 36,38 illustrated in

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Figures 3 and 4) intermediate the two orthogonal polarizations, all arranged as claimed.

5. Claims 60 and 61 are rejected under 35 U.S.C. 102(b) as being anticipated by Klein (3919670).

Regarding Claims 60 and 61, Klein shows, in Figs. 1 and 1a, input and output rectangular waveguides 16 and 18 having the same polarization. The signal is phase shifted via the well known coupler 10 in this prior art figure 1a of Klein, and the modes are converted from linear to circular polarization via the quarter wave plates 12 and 14 (because the phase shifting is done in circular polarization within the circular waveguide). The waveguide sections define a universal coupler for coupling a signal through first waveguide 16 and second waveguide 18, of the same polarization. The coupler has a quarter wave plate 21, for example, to convert the linear polarization in waveguide 16 to a circular polarization (i.e., different) at the aperture thereof, to continue propagating in the phase shifter 10, all arranged as claimed.

***Allowable Subject Matter***

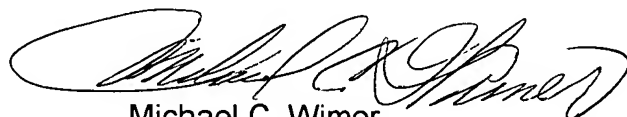
6. Claims 69-82 are allowed.
7. The following references are cited as of interest:
- US Pat. Numbers 3778838 to Clavin, 4087746 to Kanae, 4353041 to Bryans et al and 4774893 to Iwasaki, all show quarter wave plates in waveguide arrangements.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Wimer whose telephone number is (703) 305-3555. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K. Wong can be reached on (703) 308-4856. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Michael C. Wimer  
Primary Examiner  
Art Unit 2821

MCW  
May 15, 2003